

Speech Delivered by Pat Wood, III  
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**[Speech delivered varied from this text]**

**Introduction:**

When I came to FERC four years ago, we made it clear to everyone that our job had three components: ensuring adequate energy infrastructure, developing market rules that serve the customer, and monitoring these markets to protect the customers. Today I'd like to spend time with you on the state of that first element: energy infrastructure. In some ways this is the most important element because without adequate infrastructure, energy markets cannot perform.

I'll begin by putting all of this in perspective. As a nation we must recognize that we exist in a world-wide, free market economic system. Simply put, we compete with India, China and the European Union in product development, manufacturing, and sales, and ultimately the jobs that go with all of these economic sectors. A critical element in this competition is the cost of energy. We have seen recently how quickly jobs can flow to countries where energy costs less. As an example our plants producing fertilizer for the nation's agricultural industry are quickly moving to countries where natural gas can be purchased for a fraction of the \$6 per million cubic feet price here in the U.S. And of course, an adequate energy infrastructure is critical to holding down the cost of energy.

The nation's existing infrastructure can be viewed as a gift from our predecessors. In the same way that we benefit from the

interstate network of roads which our leaders conceived and constructed decades ago. But unless we want our legacy to be one of energy shortage and unnecessarily high cost, we must think ahead to the future. I think we have work to do.

Let's start with a snapshot of where we are. Then I'll review what FERC has done over the last 4 years. And finally, I'll take a look at some of the problems before us and how we can solve them.

### **Where We Are**

(Slide 1) In 2004, total U.S. energy DEMAND was nearly 100 quadrillion Btus and demand for energy in the United States is increasing steadily. Oil provides the bulk of the nation's energy followed by natural gas and coal. Approximately 50 percent of the oil is used to fuel transportation.

(Slide 2) Domestic production is anticipated to level off through 2016. The relative contributions of the various fuel types is not expected to change much through 2025.

(Slide 3) The difference between these two slides must be made up by imports. According to the U.S. Energy Information Administration, oil and natural gas will continue to be the energy imports of choice.

By 2025, U.S. energy demand is expected to increase by almost 36 percent.<sup>1</sup> During that same period, the amount of electricity consumed will increase by almost 50 percent. The facilities, or infrastructure, that are in place to deliver this energy

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<sup>1</sup> Annual Energy Outlook 2005. DOE.

will not be adequate to meet this demand. We have enjoyed the fruits of excess infrastructure built 20-30 years ago. Increased demand has depleted those reserves, and now we risk passing to future generations a system that can barely meet existing demand.

### **What we have done**

Ensuring that adequate infrastructure is available to maintain this nation's economic development is one of this Commission's greatest challenges.

The Commission's regulatory responsibilities affect much of the country's energy infrastructure.

The FERC has a direct effect on the natural gas industry because of its responsibility to analyze and, if warranted, approve natural gas facilities for interstate and foreign commerce, including pipelines, storage fields and liquefied natural gas terminals.

FERC heavily influences the hydroelectric industry through its responsibility to evaluate and license non-federal hydroelectric projects.

While the Commission does not regulate the siting of other electric-related facilities (i.e., generation and transmission) or oil pipelines, its rate regulation in these areas affects these particular infrastructures.

In recent years, the FERC has implemented initiatives that are designed to expedite its review and decision-making process for infrastructure. Since June 2001, the FERC has:

- (Slide 4) issued **21** new hydropower licenses and **110**

relicenses for a total capacity of **4,763** MWs. In addition, **400** MW have been authorized by amendments to existing licenses. We have also shortened the processing time for licenses from **47** months to **35** months.

- (Slide 5) certificated **4,154** miles of new interstate natural gas pipeline
- (Slide 6) certificated the construction of **128** billion cubic feet (Bcf) of new natural gas storage and
- (Slide 7) approved **7.9** Bcf/day of new LNG vaporization capacity providing additional natural gas supply located near where the gas is needed.

## **Challenges**

We have seen some significant accomplishments, but an integrated system is only as strong as its weakest part.

**Electric transmission:** (Slide 8) The national electric transmission grid is more accurately the North American energy grid and becoming increasingly so all of the time.

(Slide 9) During the last 4 years over 185 GW of additional electric generation capacity has been constructed.

(Slide 10) However, only 10 major transmission projects have been constructed. Failure to construct additional electric transmission limits our ability to develop and to move generation to the customers.

Existing electric transmission facilities are inadequate to deliver low cost generation to potential customers. We must not only plan and construct electric transmission that will meet future

needs, we must relieve the costly congestion that exists today. Siting issues and cost recovery continue to be the biggest impediments to transmission construction. So is the disincentive of our current industry structure which looks to generation owning companies to take the lead on constructing transmission. Such new transmission may facilitate competition from other companies' generation assets – perhaps shuttering the old plants, certainly reducing margins from them. So, here is a case where private interest and public interest is not in alignment, which is a characteristic of well-functioning markets.

For this reason, the Commission has strongly supported independent operation and ownership of transmission. Congress recently provided tax incentives for companies who choose to sell their transmission assets in furtherance of federal restructuring policy. Our Commission similarly provides incentives for this action.

(Slide 11) We have identified just a few of the electric transmission corridors where new transmission lines will have to be constructed to meet the projected 2025 demand.

(Slide 12) Siting issues and cost recovery continue to be the biggest impediments to transmission construction.

To enhance the reliability of the existing electrical grid and to allow its timely expansion to meet increasing demand, federal authority for electric transmission siting would appear to be in order. While the current Energy Bill's "backstop authority" would be a step forward toward rendering decisions, it may not accelerate the siting process since there are many contingencies that would inhibit quick action by the Commission. Truly, the best method for siting interstate electric transmission is to amend the Federal Power Act and give such jurisdiction to the FERC. In this way, initiatives to expedite authorization like the Pre-filing Process,

which we have adapted from hydro to gas, can be effectively applied to electric transmission siting.

**Electric Generation Capacity:** (Slide 13) As a breakeout from the earlier map showing new generation resources, here you see those under FERC jurisdiction which provide a total capacity of 59 GW of electric generation capacity --- however,

(Slide 14) in the not too distant future, we will need additional generation capacity. Based on a conservative increase in electric demand of 2 percent per year and taking into account projected retirements and new construction either under development or in advanced development, demand cuts into the reserve margin by 2016 and exceeds capacity by 2020. Considering the length of time required for planning and construction of new electric generation, 2020 is getting closer all the time.

The realignment of natural gas prices (and the fortuitous recent clarification of EPA future emissions requirements) means that we will see more coal – clean coal – plants, and eventually, once a standardized plant design is achieved in the US, nuclear plants.

**Hydropower:** In 2002, hydropower generated 7 percent of the nation's total electric output. This energy is extremely valuable in maintaining system stability and reliability. There is no better example of this asset than hydropower's important role in bringing the electric grid back online following the August 2003 blackout.

(Slide 15) Historically, hydropower has been a backbone of our electric infrastructure and will continue to play a critical role. Continuing to streamline the license application process will encourage better utilization of our nation's hydropower potential

especially as the new technology is developed to better utilize the low-head and low-power sites.

A large part of Canada's hydropower potential remains untapped. With the cost of other fuels used to fire electric generation increasing, Canada is expected to continue to develop its hydro potential. Substantial hydropower potential in Quebec, Manitoba, and Labrador awaits development pending review including: Eastmain-Rupert (1,280 MW), Toulmoustou (526 MW) and Peribonka (450 MW) in Quebec; Wuskwatim (250 MW), Conawapa (1,290) and Gull Rapids (560 MW) in Manitoba; and Gull Island in Labrador. <sup>2</sup>

Important additional developable capacity is available in the U.S., yet determining how to economically utilize low-head and low-power resources is an increasingly important technological challenge.

I am glad to report that the Integrated Licensing Process is alive and maturing nicely. On behalf of the Commission, I would like to thank the hydropower industry for its role in the development of this process. Our ability to promulgate a new licensing rule in less than a year is the direct result of the significant contributions from the hydropower industry, state and federal resource agencies, tribes, and environmental groups. I am confident that the ILP will achieve our mutual goal of reducing the time and cost of licensing while continuing to ensure appropriate resource protection.

Our experience to date indicates that the process is working well. Our staff has been keeping track of lessons learned. But, as was the case with the rule, we also want to hear your thoughts on

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<sup>2</sup> Hydro Review. January 2002.

how it's going. To give you this opportunity, in June we will be holding regional outreach meetings to both educate the next round of licensees on the ILP process and to gather input on the effectiveness of the existing process. This examination will culminate on June 23, 2005, with a multi-stakeholder workshop at FERC headquarters to discuss ILP effectiveness.

Interest in the development of new hydropower continues. Currently, the Commission has proposals to develop a total of 635 MW of additional energy from conventional hydropower facilities, and there is a growing interest in the development of nonconventional hydropower facilities. Preliminary permits have been issued for nonconventional facilities that would use wave and tidal power to generate electricity. Facilities are currently being evaluated for the straits of Florida, and off the coasts of Oregon, Rhode Island, and New York City. In anticipation of these technologies, we are looking at our regulations to ensure that we do not inhibit the development of the next generation of hydropower facilities that seek to efficiently utilize low-head and low-power hydro sites.

State and federal incentives for hydropower development continue to be discussed. Renewable energy portfolios, being enacted in many states, provide direct economic incentive to hydropower producers. This may stimulate interest in development of additional capacity at existing developments with efficiency improvements and capacity additions. Since June 2001, 21 original licenses with a total of 79 MW have been issued. In addition, 11 relicenses have been processed that resulted in additional environmental protection and enhancement measures, and at the same time, authorized 90 MW of additional capacity

Maintenance of existing hydroelectric facilities is becoming increasingly important as they age. The FERC has a world-renowned dam safety program. This program helps to ensure the



safety and integrity of the jurisdictional hydroelectric projects. And that we will continue to do.

**Natural Gas:** (Slide 16) We have over 188,000 miles of interstate natural gas pipelines delivering fuel for power generation, space heating, and industrial use. The supply sources, however, for natural gas are changing. We cannot depend upon domestic production and pipeline imports from Canada to meet our demands. An increasing proportion of our gas supply will need to be imported in the form of liquefied natural gas from diverse sources including: Norway, Russia, Algeria, Qatar, Indonesia, Nigeria, Angola, Australia, Malaysia and Trinidad & Tobago. However, as this shift in composition of gas supply occurs, there will be a need to site more LNG terminals and to reconfigure the gas pipeline network to deliver the regasified LNG to customers. By 2025, we will need 40 percent more natural gas than we currently consume, and this will be provided by Arctic gas and LNG.

(Slide 17) The interstate natural gas system is supported by natural gas storage facilities and LNG import terminals. We rely on this interdependent system to fuel our nation's energy demand and economic growth. In the short-term, new LNG import terminals must be constructed to provide new supply of natural gas in the vicinity of where it is being consumed.

(Slide 18) Siting continues to be a challenge. Redundant federal and state review processes also frequently delay project construction.

We are seeing the advent of new LNG import terminals in North America and the expansion of existing LNG terminals, which are necessary to accommodate increased LNG imports. New terminals are under construction, or soon to initiate construction, in the U.S., Canada, and Mexico. There is no

shortage of proposed sites for new LNG import terminals. It has already become clear that communities in the industrialized regions of the Gulf of Mexico are more willing to embrace new LNG facilities than their brethren on either coast. However, there are logistic and economic advantages to locating infrastructure near the markets to be served.

As we ride the peaks and valleys of world natural gas prices, natural gas storage will become increasingly important for price arbitrage and reliability. Full storage fields with adequate pipeline capacity are very powerful tools in market stabilization. Construction of additional natural gas storage and pipeline capacity to meet market demands will go a long way to stabilize the price consumers pay for natural gas and enhance customer confidence.

Maintaining confidence in the market will require built-in buffering mechanisms. Use of natural gas storage for price arbitrage, providing adequate import terminals to ensure diversified geographic sources of LNG, and having adequate pipeline capacity to take advantage of multiple sources of supply will help to cushion the U.S. consumer from price fluctuations of the world market and to make a more robust natural gas infrastructure in the U.S. In addition, demand side reduction through improved efficiency would also help to stabilize the market and maintain market confidence.

Security of our nation's energy infrastructure is a high priority. We continue to work with the industry and other state and federal agencies to improve security.

## **Conclusion**

(Slide 19) In conclusion, the Commission is positioned to identify projects with high public interest benefits and facilitate their speedy completion, consistent with the Commission's statutory mandates and due process. We will work effectively to enhance and enlarge the nation's energy infrastructure to meet future energy demands.

We have all worked hard over the past 4 years to enhance this nation's energy infrastructure. We have authorized new pipelines, encouraged the development of LNG terminals, promoted the construction of new electric transmission lines and most significantly to this group, sustained our hydroelectric base. But there is much work to do, and this work requires us all to look beyond our own interests and needs. We must look after the public interest and the future of our great country and lay the groundwork today for our children's benefit tomorrow.

[Insert personal ending]